POPULATION TODAY

Vol. 15, No. 7/8 July/August 1987

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PRB *A publication of the Population Reference Bureau, Inc.*

FROM THE EDITOR'S DESK

July 11 is "The Day of 5 Billion"; so designated by the UN Fund for Population Activities.

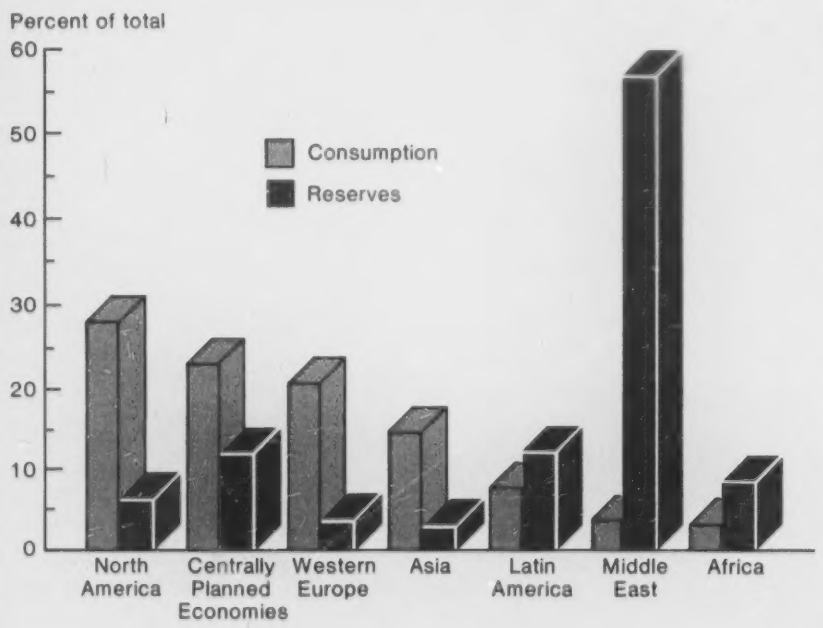
On that day the world is deemed to have reached 5,000,000,000 in population (reaching 5,000,000,001 a quarter of a second later). Rallies and meetings are planned, and at UNFPA's request, Seiko is presenting each head of state around the world a population clock showing global and national populations.

No one can say with certainty on what day the earth actually passed the 5-billion mark, but the UN's most recent estimates and projections point to the April-July period of 1987, and July 11 is as good a day as any: a peaceful Saturday to mark an event – reaching a new billion – that has only happened five times in human history (prior to this, around 1800, 1927, 1960, 1974), but which now happens nearly once a decade. Before you have settled down to the idea of a 5-billion world, 1999 will be here, and with it celebrations to mark the day of 6 billion. So it goes . . .

– Art Haupt

SPEAKING GRAPHICALLY

Regional Oil Consumption and Reserves: 1985



The Middle East's dominance of world oil markets has waned in the 1980s as high prices engineered by the Organization of Petroleum Exporting Countries (OPEC) cartel stimulated oil exploration and production elsewhere. But its preponderant share of world oil reserves, shown in the figure above, guarantees OPEC's ultimate comeback as the current glut in market supplies of oil inevitably disappears.

Source: Robert Repetto, "Population, Resources, Environment: An Uncertain Future," *Population Bulletin*, July 1987 (see article, page 5). Chart by Joanna Lawrence.

POPULATION TODAY

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POPULATION TODAY, the newsmonthly of population and demography, is published 11 times a year (a combined issue in July/August) by the Population Reference Bureau, Inc., founded in 1929, a nonprofit organization engaged in the objective dissemination of population information. The views and opinions of POPULATION TODAY's contributors are their own and do not necessarily reflect those of PRB.

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Back Issues: Back issues of POPULATION TODAY and its predecessor INTERCOM are available in limited quantities from PRB for $2.00 per copy.

Mailing: Printed in Washington, D.C. Mailed nonprofit postage rate in the United States; printed matter surface rate to Canada, Mexico, and to foreign subscribers.

Address Changes: Send current PRB address label and new address; please allow eight weeks for change.

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ISSN 0749-2448

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'Ten Minutes That Help Everyone'

After a 17-year hiatus coinciding with the dormancy of a certain well-known U.S. locust, the Federal Republic of Germany (West Germany) finally held a national census on May 25, 1987 – four years late.

The census was originally scheduled for April 27, 1983. But the massive head count was held up as citizen groups concerned about privacy, the growing influence of the computer, and the resultant intrusion by the state in the lives of German people petitioned the German Supreme Court to examine the census-taking process. And in its far-reaching "Census Decision" of Dec. 15, 1983, the High Court agreed that additional protective measures should be instituted. And while it upheld the census per se, it ruled that the census law of 1983 had violated certain personal rights, in particular the provision for comparing census-collected data on individuals with the entries for those same individuals in the national registration system.

The Census Process

Despite the delay, most of the questions originally planned in the census remained the same. Eighteen questions concerned the individual, 11 questions were about living arrangements, and four questions were for owners of buildings and a count of businesses and non-agricultural places of work. The questions included month and year of birth, sex, marital status, religious affiliation, citizenship, place of residence (including second residence), profession, source of income (but not the amount), education, and means of transportation to work.

An army of 600,000 enumerators was either recruited by newspaper advertisements or – in areas where the government was unable to attract enough enumerators – "designated" from the ranks of the civil service, rather like U.S. jury duty, with hardship cases excused (in Berlin, 15,500 civil servants temporarily became enumerators). Enumerators were paid modest wages.

Newspaper accounts reported widespread distrust on the part of many concerning the census and its confidentiality. The various protest movements against the census sparked renewed discussion about the method of census taking. Is a 100-percent enumeration truly necessary for the sake of accuracy?

Traditionally the answer is yes – a prerequisite for surveys is the existence of a denominator that will allow meaningful extrapolations to the universe. Despite that powerful argument, the census bureaucracy responded with amazingly colorless publicity featuring, as role models of citizen cooperativeness, veteran politicians spouting dull slogans urging conformity. This public-relations campaign probably heightened public fears rather than alleviated them.

In addition, the government proceeded with a heavy hand against those calling for a census boycott.

> 25 physical attacks on enumerators during the census were somewhat improbably ascribed to the influence of the terrorist Red Army Faction

Police searched apartments of citizens throughout Germany who were viewed as activists in some 1400 boycott organizations. They confiscated documents at various offices and bookstores where boycott initiatives supposedly originated. Hefty fines ranging from $3,000 to $4,000 were levied against members of the Green Party who took part in the boycott.

Criminal acts did occur, including the destruction of census tabulation equipment in a break-in in Freiburg, and arson at an enumeration office at Heilbronn. Demonstrations of several thousand people against the census in cities like Hamburg and Berlin took place as late as a week prior to the census.

There were 25 physical attacks on enumerators during the census – somewhat improbably ascribed to the influence of the terrorist Red Army Faction by Interior Minister Friedrich Zimmerman, who also found activities by members of the Green Party suspicious. The consensus among government spokespersons was that the hard core opposed to the census consisted of no more than about 2 percent of the people; but if true, that figure would comprise over a million Germans.

"Exakte Angaben über die Heizgewohnheiten sind ein wichtiger Beitrag zum Umweltschutz. Schon aus diesem Grund bin ich dafür."
E. Piechullek, Schornsteinfeger
77
Volkszählung Mai '87
Zehn Minuten, die allen helfen.

The German chimney sweep is saying: "Exact information about home heating habits is an important contribution to environmental protection. It is for this reason alone that I am for the census."

Nevertheless, the gap in terms of public confidence seemed to close somewhat as the May 25 date approached. According to public opinion surveys only 9 percent had serious misgivings about the census by the time the census was held. And when Census Day had passed, overall reaction by citizens was somewhat anticlimactic.

The postcensus tabulation is still in progress, with no deadline fixed for late filing of forms. The census makes a distinction between the anonymous information needed for census purposes and the identifying information needed to assure that all persons have been counted and quantified correctly; once the latter function has been satisfied, addresses and names which are entered on a cover sheet of each questionnaire are mandated by law to be destroyed ". . .at the earliest possible time."

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Amnesty—Aliens Start Getting Their Red Cards

More than two months have passed since Amnesty Day, May 5.

In that time (as of June 26), 186,413 applications for legal status were received. (These included 12,522 applications for special agricultural workers.) These applications have resulted in 143,817 interviews granting temporary work authorization cards – the new "red card" (actually, a photo ID card with a red strip) that bestows legal status on formerly undocumented aliens.

Are 186,413 applications a lot or a little? With 107 application centers around the U.S., the turnout so far works out to about 45 or 50 applicants per center per day. In any case, no one has any idea how many undocumented aliens will step forward during the year of grace provided by the Immigration Reform and Control Act of 1986. The Immigration and Naturalization Service (INS) expects about 2 million applicants and is set up to handle up to 3.9 million.

An initial period of skepticism was expected until the procedure established a track record of trustworthiness and the numerous private groups (minority- and church-related) helping aliens got up to speed. And applications do seem to be increasing.

One reason for the slow start may have been concern about applicants being arrested, considering that INS's mission includes enforcing laws against illegal immigration. But the immigration law mandates confidentiality, and prohibits information from passing from the legalization program to enforcement (except in cases of fraudulent application).

Meanwhile, INS has delayed most enforcement of the employee sanctions from the beginning of June until July 1 at the earliest. This is because publication of application forms (the I-9) and the handbook guide to the law for employers is behind schedule. Nevertheless, employers are still

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SURVEY REPORT

Pakistan

With a 1987 population of 105 million, the rapid growth rate of Pakistan, the world's 10th most populous nation, is of global significance. The population of this South Asian country has tripled since 1951, and with its current annual growth rate of 2.9 percent, it could double again in 24 years.

The results of the Pakistan Contraceptive Prevalence Survey, conducted during 1984-1985, offer only a glimmer of hope that Pakistani birth rates will begin a significant decline. The survey found that large families are still highly valued in this Moslem culture but also that family planning is gaining some acceptance. Women interviewed wanted an average of 4.9 children, slightly more than the 4.4 average recorded by the 1975 Pakistan Fertility Survey, part of the World Fertility Survey project. The mean number of living children increased from 3.2 in 1975 to 3.5 due to improved health conditions.

The total fertility rate decreased over the decade, from 6.3 to 6.0 total children per woman. Interestingly, under current mortality rates, women would need about 6 births to achieve their desired family size of 4.9 living children.

Most of the decrease in birth rates has been among younger women aged 20-29. Older women, over age 45, actually recorded much higher birth rates in the 1984-1985 survey.

Pakistani women are reluctant to use family planning, reflecting a strong cultural bias against birth control. According to surveys conducted since 1969, the percentage of currently married nonpregnant women using a contraceptive has fluctuated, from 5.5 percent in 1969 to 3.3 percent in 1979-1980 to 9.1 percent in 1984-1985.

There has been a shift toward more effective methods as well. In 1984-1985, 7.3 percent of women surveyed were using an efficient method, primarily the condom, female sterilization, and the pill, compared to only 3.8 percent in 1975. But these percentages probably underestimate the actual use of family planning in Pakistan. Because of social pressure or shyness, many women will not admit they use birth control. Fecund married women who wanted to stop childbearing and had successfully avoided pregnancy for five years but who would not say they used birth control were classified as "shy users." An estimated 7 percent of the currently married nonpregnant women were classified as "shy current users" of family planning, which, added to those reporting current use, suggests an overall contraceptive prevalence rate of 16.1 percent.

Only 62 percent of the currently married women interviewed said they knew at least one contraceptive method. Even in the major urban areas, only 70 percent knew a method. The level of knowledge is quite low compared to most countries (for example, 95 percent of Bangladeshi wives knew a family planning method in 1979). "Shyness" about admitting knowledge of contraceptive methods probably contributes to the low percentages; nevertheless, these low percentages demonstrate the enormity of the task faced by family planning program coordinators trying to increase awareness and use of birth control.

—*M.K.*

Wise Management is Key to Sustainable Population/Resource/Environment Balance

By adopting proven management programs to slow population growth, boost resource productivity, and preserve environmental quality, responsible governments can make the difference in the future global balance of population, resources, and environment, says Robert Repetto in PRB's latest *Bulletin* for July.

The links between these three variables are "too complex to permit straightforward generalizations about direct causal relationships," he warns in "Population, Resources, Environment: An Uncertain Future." But government policies play a large role in mediating those relationships and could be the key to a sustainable future at a decent standard of living "for all the world's peoples."

Repetto, who is Senior Economist of the World Resources Institute in Washington, D.C., points out that rapid population growth in developing countries has accounted for more than 85 percent of the doubling of world population since 1950 (from 2.5 billion then to 5 billion in 1987). It will account for all but a small fraction of the final doubling of global numbers that the UN projects for the next century before stabilization at some 10 billion.

This rapid growth has exacerbated the problems of alleviating poverty, and poor households in the Third World are "virtually forced to overuse natural resources in order to survive," he says. In their wake lies a trail of eroded watersheds, vanishing forests and plant and animal species, growing deserts, and depleted inshore fisheries.

The demands of rich nations for beef cattle, tropical hardwoods, minerals, and oil also contribute to Third World resource and environmental pressures, he adds, and it is the developed countries, despite their much smaller populations, who use most of the world's resources – commercial fuels, metals, wood – and consume a large fraction of total cereals. Directly and indirectly, the average, meat-addicted American consumes enough grain to feed four Indians.

The future interactions of population, resources, and the environment are uncertain as well as complex, Repetto says. The current UN medium estimate of an ultimate 10.2 billion world population could easily be off by several billion. Uncertainty about future technological progress and energy conservation also pervades long-range projections of resource demand and supply. For example, recent projections of annual world energy consumption in the period to 2050 vary from more than five times the 10.3 trillion watts consumed in 1980 down to half that figure.

Similarly, progress in genetic engineering is "likely to make long-run forecasts of agricultural production based on existing technologies highly unreliable." Even with current farming methods plus cultivation of all potential cropland, grain production could be boosted to 10 billion tons per year, three times the current level, to feed a population of 10 billion and improve Third World diets, Repetto believes.

Developing countries such as Brazil, Korea, and Singapore, which possess enough industrial and scientific capacity to take advantage of internationally mobile capital and technology, are catching up with advanced countries in productivity and living standards, Repetto says. The poorest countries, such as Sudan and Bangladesh, are not catching up and could fall economically and environmentally further behind with projected future doubling and trebling of their populations. Growing natural resource pressures and the need to stretch investment funds to provide jobs for increasing labor forces and infrastructure for expanding cities will make it much harder for them to preserve the environment than it is for rich countries with barely growing or declining populations.

But Repetto's *Bulletin* also relates success stories that show maneuvering room still exists. Since 1977 China has sharply boosted fuelwood supplies by permitting households and cooperatives to plant some 50 million hectares of trees on uncultivated land and sell the harvest at negotiated prices. Malawi, despite limited resources and Africa's third-highest rural population density, has astutely managed to raise agricultural production by over 7 percent a year since 1973.

World Bank

Planting a new forest in Costa Rica.

Developed countries have reduced some air and water pollution by enforcement of controls on emissions from motor vehicles, industries, and municipal wastes and could do much more by emphasizing increased energy conservation rather than increased energy supply.

Developing countries, by reducing future additions to developing country populations short of the additional 5 billion now projected, would also help relieve pressures on resources and the environment.

China, Cuba, Korea, Sri Lanka, and other leaders in the Third World transition to low population growth rates have demonstrated what works: basic health, family planning, and education services made accessible to all, coupled with strategies to draw women into the development mainstream and expand job opportunities as fast as possible. This lowers fertility and mortality while providing escapes from poverty that reduce what Repetto sees as "the most severe of all resource wastages – the wastage of human resources." *– J.vdT.*

Copies of Repettos's 43-page *Population Bulletin*, "Population, Resources, Environment: An Uncertain Future" (Vol. 42, No. 2), can be ordered from PRB, Circulation Dept., P.O. Box 96152, Washington, D.C. 20090-6152, with checks payable to PRB. Prices are: $4.00 per single copy; 2-10 copies, $3.00 each; 11-50 copies, $2.50 each; over 50, $2.00 each. Orders for $50 or less must be prepaid and include $1.00 for postage and handling.

DEMOGRAPHER'S PAGE

Profiles of Academic, Government, and Private Sector Demographers

by Hallie J. Kintner and David A. Swanson

Demographers traditionally have been employed in academic settings. In the past 10 or so years, however, greater numbers have moved into government and especially the private sector. This change in employment patterns has sparked interest in the comparative working conditions, professional activities, and sociodemographic characteristics of demographers employed in academic, government, and private sector settings.

Thus, in the Spring of 1986 the Population Association of America (PAA) sponsored a survey on behalf of its two standing committees most interested in applied demography: The Committee on Business Demography and the Committee on State and Local Demography. The survey, which was conducted using labor and computer time donated by the Population and Society Research Center at Bowling Green State University, utilized the subscription list to the PAA newsletter *Applied Demography* as a sample frame.

The survey was designed to assess the following five general areas for demographers in academic, government, and private sector positions: (1) current employment characteristics; (2) education and training; (3) professional activities; (4) training recommendations; and (5) income and related sociodemographic information.[1]

There were 659 questionnaires mailed out, and we had 288 valid completed responses.

In this article, we first summarize survey findings by providing profiles of academic, government, and private sector demographers in the U.S. (95 percent of all respondents) and Canada (5 percent). We conclude with a brief discussion of our findings in terms of the training needs of future applied demographers as perceived by respondents to the survey.

PROFILES

Academic Demographers

The typical academic demographer is a male, age 43, with a Ph.D. in sociology. Most of these respondents engage in research and teaching. They also serve as information sources, write contract and grant proposals, give media interviews, and act as both external and in-house consultants. Outside of the classroom, academic demographers most frequently speak in front of other demographers, the lay public, and elected government officials. In terms of generating demographic information, they tend to: (1) use trending or ratio techniques as applied to census data; (2) employ sample surveys; and (3) consult with experts/informants. They examine demographic information for nations worldwide as well as subnational areas within the U.S. and Canada, including states (provinces), SMSAs, and counties.

Compared to their counterparts in government and the private sector, they are less satisfied with both their current salaries and opportunities for salary increases. This may account for the fact that 65 percent of them engaged in outside demographic work for pay in 1985. Nonetheless, academic demographers are satisfied with their fringe benefits, work in general, and the opportunity to "do the things that they feel they do best." Over half report that they regularly read *PAA Affairs* and *Demography*. Other frequently read publications include *Population Bulletin*, *Population and Development Review*, *American Demographics*, *Population Studies*, and *Applied Demography* (the last-named journal is not surprising, given that we used it for the sample frame).

In terms of professional organizations, nearly all academic demographers surveyed belong to the PAA and they are more likely to belong to the Population Reference Bureau, Inc. (PRB) and the International Union for the Scientific Study of Population (IUSSP) than are those in either government or the private sector. Academic demographers are also more likely to have presented a paper at annual PAA meetings, served as discussant, or chaired a session.

Table 1 shows the distribution of salary levels by type of employment. Note that the median academic salary is the lowest at $39,825. Keep in mind, though, that the salary information given in Table 1 excludes any money made from secondary employment for pay that was of a demographic nature – such as outside consulting.

Government Demographers

Like the typical academic demographer, one employed in government is apt to be a male, age 43, with a terminal degree in sociology. Over half the government demographers report engaging in the following activities within their primary employment: serving as an information resource; conducting both short- and long-term research projects; writing technical reports; in-house consulting; directly supervising personnel; giving presentations to management (appointed government officials) and data users/clients; and giving media interviews. In terms of generating demographic information, they most frequently use the following methods: trending or ratio techniques as applied to census data; consulting with experts/informants; sample surveys; and the cohort-component method of forecasting. Over half also report examining demographic data at the state/province, county, SMSA, and city level.

Like the academics, government

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demographers are not satisfied with their opportunities for increased salary but are satisfied with their work in general, their fringe benefits, and the opportunity to do the things that they feel they do best. Unlike academics, government demographers are satisfied with their current salaries. This may explain why a very low proportion engaged in outside demographic work for pay in 1985.

More than 50 percent of the government demographers reported that they regularly read *PAA Affairs*, *Demography*, and *American Demographics*, and while they are less likely to belong to PRB and the IUSSP, they are more likely to belong to the American Statistical Association (ASA). Compared to academics, government demographers are less likely to have presented papers at annual PAA meetings, served as discussants, or chaired sessions, but they are far more likely to have attended the Breakfast Meeting sponsored by the Committee on Business Demography and the Committee on State and Local Demography; they are also more likely to have attended sessions that dealt with population estimation or forecasting.

In terms of salary, the median for government demographers is slightly higher than that of academic demographers, as shown in Table 1. Nonetheless, it is substantially lower than the median for private sector demographers.

Table 1: Percentage Distribution of Respondents Employed Full-time by Primary Employment Income

Income from primary employment*	Type of primary employment			All Types
	Academic	Private sector	Government	
$ 7,000-$19,999	3.8	6.3	0.0	3.1
$20,000-$24,999	4.7	5.0	4.9	4.9
$25,000-$29,999	15.1	7.5	14.7	12.8
$30,000-$34,999	17.9	10.0	13.7	14.2
$35,000-$39,999	10.4	11.3	15.7	12.5
$40,000-$44,999	15.1	13.8	13.7	14.2
$45,000-$49,999	12.3	12.5	4.9	9.7
$50,000-$54,999	8.5	12.5	15.7	12.2
$55,000-$59,999	3.8	1.3	6.9	4.2
$60,000-$64,999	0.0	6.3	4.9	3.5
$65,000 +	8.5	13.8	4.9	8.7
Total	100	100	100	100
Total no. responding	106	80	102	288
Median income from primary employment**	$39,825	$43,500	$40,000	$40,500

*In U.S. dollars. This includes Canadian residents for which reported income in Canadian dollars was adjusted to U.S. dollars.
**Gross 1985 personal income.

Private Sector Demographers

This demographer is more likely to be both female and younger than one in either an academic or government position. Over half have a Ph.D. while 30 percent report a terminal M.A. More than 50 percent also have terminal degrees in sociology. Private sector demographers, like their academic and government peers, tend to serve as information sources, conduct both short- and long-term research projects, and supervise personnel. Like government demographers, they give presentations to management as well as data users/clients and write technical reports. Unlike their academic and government counterparts, they rarely give media interviews.

They are most likely to speak in front of private sector executives, market analysts, and financial analysts, and least likely to speak directly to government officials and the lay public. Over half of these report using the following methods to generate demographic information: trending or ratio techniques as applied to census data; combining public and private data; sample surveys; and consultation with experts/informants. Over half also examine demographic data at both the national and state/province level.

More than their academic and government peers, they are satisfied with their current salaries and the opportunity for salary increases. Of demographers in all three sectors, the lowest percent (30) reporting outside demographic work for pay in 1985 was in the private sector. Their professional activities are also different. They are less likely to belong to the PAA, the ASA, the Southern Regional Demographic Group, or the Canadian Population Association. They are also more likely to belong to the Population Reference Bureau than government demographers. More than half report reading *American Demographics* and *PAA Affairs* regularly, while over one-third regularly read *Demography* and *Applied Demography*. Very few are regular readers of *Population Studies* or *Population Bulletin*. At the annual PAA meetings, private sector demographers are most likely to attend a session dealing with business demography and the Breakfast Meeting.

Among all three types of employment, those in the private sector have the highest median 1985 salary from their primary employment, $43,500. This is substantially higher than medians for academic and government demographers. Very few private sector demographers reported secondary employment of a demographic nature for pay during 1985, however, and

Continued on next page

Table 2: Perceived Usefulness of Training in 23 Areas Reported by Respondents Employed Full-time, Rank-ordered by Percent Responding "Very Useful"

Area of training	Percent responding "Very useful"	Rank-order
General demographic methods	95.3	1
Basic demographic data sources	95.2	2
Population forecasting	84.1	3
Population estimation	82.5	4
Statistical packages	72.6	5
Inferential statistics	68.7	6
Technical writing	65.8	7
Survey sampling	63.9	8
Questionnaire design	61.5	9
Public speaking	52.1	10
Computer programming	51.3	11
Microcomputer spreadsheet	49.2	12
Word processing equipment	43.6	13
Market research	43.3	14
Matrix algebra	30.5	15
Econometrics	30.3	16
Mapping methods	29.8	17
Project management	29.4	18
Calculus	24.4	19
Personnel management	21.8	20
Stable population theory	20.0	21
Financial analysis	7.8	22
Accounting	6.2	23

Continued from preceding page

when taking this into consideration, the median income differentials decline.

TRAINING FUTURE APPLIED DEMOGRAPHERS

Private sector demography is clearly a new frontier for the field. To a lesser extent, so is the demography practiced in government employment, especially at the state and local levels. Given that the bulk of training is conducted within university settings by academic demographers, it is useful to conclude with some survey results on the perceived training needs of future applied demographers. Table 2 shows that the top 10 areas in which to obtain training are generally within the capability of existing demographic programs, which tend to be located in or associated with sociology departments. Nonetheless, we suspect that for many programs, adequate training in applied demography will result only with changes in emphasis; for example, by providing an entire course on population forecasting instead of just a three-day module within a general demographic methods course.

Similarly, departments wishing to improve their training in applied demography may consider greatly reducing the time spent on Stable Population Theory and substituting in its place training on estimation techniques used for subnational areas in U.S. and Canada. Clearly, Stable Population Theory is not perceived to be particularly useful for applied demographers in the eyes of respondents – it ranks near the bottom of Table 2.

Note

1. The full report, scheduled for release in September 1987, can be obtained from David Swanson, Director for Demographic Studies, Population and Society Research Center, Bowling Green State University, Bowling Green, Ohio 43403.

German Census

Continued from page 3

Immediate frictions aside, what is the significance of the 1987 German Census? For one thing, it means that the federal government, the states, and communes no longer have to depend on obsolete demographic baseline data, which would be a dicey situation in a modern industrial society where dozens of laws depend on accurate census data for just execution. Important items among the data include share of state tax distribution, reimbursement of political campaign subsidies by the federal government to the states, the fixing of rent ceilings, and distribution of highway funds.

Furthermore, it should provide long-needed hard statistics on the North-to-South population drift of the country's mobile population. This may result in the North surrendering to the South one or two senate seats (allocated to states according to population size).

Adjusting for "Phantoms"

The census may also show that, as some experts have predicted, at least 1 million young "phantom" Germans have been created by the registration system. The "phantoms" are those who are counted twice. They are created between censuses, according to this theory, because the national registration system tends to keep people on the books who in reality have moved elsewhere and registered again at the community of destination once they arrived but did not have their names deleted from records at their former place of residence. (Communities have no interest in ridding themselves of their fictitious residents because their share of federal income tax depends on the size of their statistical body count. Thus, arrival registration would be encouraged and enforced while the moving away process might conveniently be overlooked.)

It is the mobile and moving young who would be most likely to be registered twice. If some of the estimated youth population turn out to be phantoms, this would mean that Germany might be an even older society than heretofore believed (and even in 1984 its median age was estimated as 36.6 years). It would also have interesting

consequences for the nation's social security system.

The results of this German census should reflect major changes. And the Census of Housing is of special importance because the last housing inventory actually began two years prior to the last census and thus is almost 20 years old. Vacant housing units are invariably estimated from between 300,000 to 1 million depending on who does the estimating.

The world's experience in the evolution of enumeration has been that impoverished countries hold censuses very irregularly, if at all. Then, as development proceeds apace, countries begin to enumerate their enlightened populace proudly and with regularity.

In short, the 1987 German Census was conducted after much turmoil and questioning. But Germany should not be singled out; the Netherlands has experienced significant census resistance and has not held a census since 1970. Perhaps the process is coming full circle – countries may be reverting to holding censuses on a very irregular basis, if at all, as concerns about general welfare are eclipsed by privacy concerns of individuals. □

– A.v.C.

LAST CENSUS IN EUROPEAN COUNTRIES

Northern Europe	Western Europe
Denmark 1981	Austria 1981
Finland 1980	Belgium 1981
Iceland 1982	France 1982
Ireland 1986	West Germany 1970
Norway 1980	Luxembourg 1981
Sweden 1980	Netherlands 1970
United Kingdom 1981	Switzerland 1980

Eastern Europe	Southern Europe
Bulgaria 1975	Albania 1979
Czechoslovakia 1980	Greece 1981
East Germany 1981	Italy 1981
Hungary 1980	Malta 1985
Poland 1978	Portugal 1981
Romania 1977	Spain 1981
	Yugoslavia 1981

SOFTWHERE

PRB is expanding its demographic software library and is actively seeking population-related programs for educators and research analysts. A comprehensive directory of PC population programs (including type, source, price, and evaluation) is being compiled and will be made available at a future date.

In the meantime, we would appreciate reader comments on the types of software you would like to see reviewed in this column. And if anyone knows of new population-based programs, please contact us so that we may review them and include them in our list.

Still available: the *1987 World Population Data Sheet* on diskette for use with Lotus 1-2-3 version 1A. There are two files: the actual file used to create the Data Sheet and an extract of the numbers for doing sorts, etc. These files are great for ranking, regression analysis, graphs and playing "what if" with an entire planet by inserting new values into the table to see what effect they have on regional and world totals. A bargain at only $10.00; contact David Lamphere at PRB.

– D.L.

POPULATION UPDATE

Estimated United States Population:

As of April 1, 1987	243,217,000
As of April 1, 1986	241,039,000

The above estimates include armed forces overseas and are from U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 1006.

Estimated World Population:

As of July 1987	5,033,000,000
Annual growth	87,000,000

Estimated by extrapolation from the mid-1987 population on PRB's *World Population Data Sheet*.

Latest Provisional Statistics for the U.S.: February 1987

	12 months ending with February					
	Number		Rate			
Item	1987	1986	1987	1986	1985	1984
Live births	3,724,000	3,748,000	15.4	15.7	15.6	15.5
Deaths	2,096,000	2,077,000	8.7	8.7	8.8	8.6
Natural increase	1,628,000	1,671,000	6.7	7.0	6.8	6.9
Marriages	2,389,000	2,432,000	9.9	10.2	10.4	10.5
Divorces	1,155,000	1,189,000	4.8	5.0	4.9	5.0
Infant deaths	38,600	39,300	10.4	10.5	10.7	10.8
Population base (in millions)	...	...	241.4	238.7	236.5	234.2

Note. Rates are given per 1,000 population, except for infant deaths, which are given per 1,000 live births. Rates are based on revised population estimates from the 1980 Census.

Source. Monthly Vital Statistics Report (Vol. 36, No. 2) from the National Center for Health Statistics.

Continued from page 4

expected to have checked ID records of each employee within three days of hiring them.

Pursuant to new HHS regulations regarding definition of dangerous contagious diseases, all immigrants applying for U.S. residency have to show they have been tested for AIDS as well as tuberculosis and serious sexually transmitted diseases (and will be refused residency if they test positive for these diseases). INS is currently studying how and when to implement this regulation.

However this new era of U.S. immigration works out, there does seem to be one clear trend: Apprehensions of illegal migrants along the southern U.S. border have dropped significantly ever since the immigration law was signed in November 1986. One possible reason for this is that aliens who normally migrate between the U.S. and Mexico on a periodic basis are now staying put in the U.S. so as to keep their "continuous" residency status unblemished. Another reason: Mexican press has reported lurid misinformation about the new U.S. law, citing alien "concentration camps" and other nonexistent forms of enforcement.

Whatever the explanation, the monthly number of apprehensions has dropped, compared with the same month the previous year:

November 1986:	−18 percent
December 1986:	−25 percent
January 1987:	−25 percent
February 1987:	−33 percent
March 1987:	−39 percent
April 1987:	−52 percent
May 1987:	−58 percent

As dramatic as this declining trend may seem, the total numbers are still higher than, say, five years ago. But the decline does mean that while in 1986 the 1-million mark in apprehensions was reached by the end of May, on its way to a record 1.77 million for the year, there were only some 711,000 apprehensions by the end of May 1987. □

—*A.H.*

TAKE A NUMBER

Dating Oneself: We all like to say that we are "dating ourselves" by admitting to having been regular viewers of "My Little Margie" on television or listening to "The Shadow" on the radio. But such a dating process can have important implications in census-taking. Age is a critical variable for census accuracy but is often only vaguely known in many countries. In the 1987 Census of Botswana, census enumerators used a listing of well-known events to help jog census respondents' memories. The list is an interesting one and gives an insight into more than census-taking. If, for example one remembered the building of the Lutheran church at Ramotswa, the enumerator could feel fairly certain that the respondent was at least 97 years old. In some districts, 1925 was remembered as the year of "great big snakes" as well as one of heavy rains and starvation. Other events used for dating: the introduction of long-eared corn from Nyasaland (1961), tarring of the road to Kanye-Jwaneng (1978), trains collide at Vakaranga (1938), the "Pula" introduced as currency (1976), and the visit of King George VI (1947). This method helps reduce the frequency of "age heaping" in a census, when respondents uncertain of their exact age round it to a convenient digit ending in "0" or "5." But the list also provides a sometimes poignant look into the good and the bad times of a country's history.

Here and There . . . to honor the bicentennial of the decennial census, the U.S. Census Bureau is lobbying for a commemorative postage stamp, to be issued in 1990. During 1987, the U.S. Postal Service will decide whether to issue such a stamp, basing its decision in part on input from the public. The first census was held in 1790 and supervised by Thomas Jefferson . . . data from the 1980 National Natality Survey indicate that of the 1,445,000 first births in the U.S., 63 percent were conceived within marriage, down from 71 percent in a 1972 survey . . . Turkey's bid to join the European Community is meeting with resistance; detractors point to Turkey's high birth rate and the pressure that it places on the economy . . . the Census Bureau reports that in 1984, one-third of U.S. children lived in households receiving means-tested assistance such as food stamps, subsidized housing, etc. . . . the total fertility rate in the U.S. turned downward once again in 1986 to 1.802 average number of children per woman, down from 1.837 in 1985; the all-time low in U.S. fertility occurred, oddly, in the country's Bicentennial year, 1976, when the total fertility rate sank to 1.738. Apparently skyrockets in flight really *were* in fashion . . .

—*C.H.*

ADDENDA

Signs of the Inexorable Aging of America–VI

Big Chillers know they're getting old . . . when cherished songs of their youth are reduced to jingles in television ads – ads which encourage them to transfer their old interpersonal romantic feelings to today's high-quality products. "I Heard It Through the Grapevine" (raisins); "It Ain't Easy" (convenience stores); "Louie Louie" (wine coolers); "Let's Do the Twist" (electric screwdrivers); "Happy Together" (cereal); "Only You" (hamburgers); "Revolution" (advances in rubber-soled athletic shoes). There'll be days like this, Mama said.

CURRENT READINGS

PRB welcomes materials on population topics for possible inclusion in Current Readings. Publishers may address review copies to Book Review Editor, POPULATION TODAY, Population Reference Bureau, 777 14th St., N.W., Washington, D.C. 20005.

THE BIRTH DEARTH: What Happens When People in Free Countries Don't Have Enough Babies? by Ben J. Wattenberg. New York: Pharos Books, 1987. 192 pages. $16.95. ISBN 0-345-34399-9.

This is an uncomfortable book – uncomfortable for demographers who remember how the postwar baby boom burst the population projections for developed countries formulated during the Depression-induced low fertility of the 1930s; uncomfortable as well for young Americans weaned on Paul Ehrlich's 1968 warning of "The Population Bomb" in Third World countries.

In *The Birth Dearth*, Ben Wattenberg, American Enterprise Institute Senior Fellow, prolific author, columnist, and radio commentator, sums up his already widely advertised view that continuation of rock-bottom fertility in the 22 nations he labels "modern, industrial, free, and 'Western'" (the United States, Canada, Western Europe, Iceland, Israel, Australia, New Zealand, and Japan) could doom Western civilization – "the last, best, hope of mankind."

By the birth dearth (a term he claims to have used first, in a 1971 article), Wattenberg means sustained fertility below the replacement level of 2.1 births per woman necessary to keep births and deaths in balance over the long run. After a "free fall" beginning in the 1960s, fertility rates were well below replacement in all these nations except Ireland, Israel, and New Zealand when *The Birth Dearth* went to press. (New Zealand's total fertility rate has now dropped to 1.9 children per woman, according to PRB's *1987 World Population Data Sheet*.)

"Unless big changes occur," he correctly points out, this "clearly leads to sharp population declines," as has begun already in a few European nations (including "non-Western" Hungary). From 22 percent in 1950 and 15 percent currently, these nations' share of world population could shrink to 9 percent in 2025 and 5 percent at the end of the 21st century, according to United Nations "medium" projections. (These projections assume continuing declines in Third World fertility rates, which currently average 4.2 births per woman; modest population gains in the "Soviet bloc;" and a *rise* in "Western" fertility to replacement level.)

Wattenberg recites a familiar litany of the categories of problems the birth dearth could cause: economic (shrinking domestic and export markets, the collapse of Social Security and innovative labor forces as populations age); geopolitical (erosion of military, economic, political, and cultural influence); and personal ("growing old without offspring is sad for most people"). His main prescription for boosting fertility draws on Eastern European experience: "big pronatalist government money" to lure enough women to stay at home to launch the three- and four-child families necessary to raise average fertility at least to replacement level.

In the U.S. he suggests a cash allowance to parents of $2,000 a year for every child up to age 16, financed from the massive surpluses projected for the Social Security trust fund to 2015 "as the 80 million Baby Boom babies are producing at full steam." That cash could encourage the extra babies to produce the new Social Security-paying workers needed to enter the workplace in the early 21st century, just in time to prevent the retirement system from going broke when the Baby Boomers begin to retire in 2015.

Wattenberg also prescribes a step-up in Western nations' acceptance of legal immigrants, though he admits this would be politically difficult everywhere and in the U.S. could cause racial and ethnic turbulence so long as the "real culprits, the non-reproducing white middle class," fail to reproduce themselves.

Critics of today's depopulation alarmists such as Wattenberg harp on demographers' inability to predict future changes in fertility, as witness the baby boom. In his book, Wattenberg himself frequently admits this. But even so eminent a demographer as Princeton's Charles Westoff now feels below-replacement fertility is here to stay in Western nations, could go lower, and that these nations inevitably face problems "associated with aging, population decline, and questions of immigration" (see "Fertility in the United States," *Science*, Oct. 31, 1986).

Many "Westerners" are also uncomfortable with the notion that a better world requires the preservation and spread of "Western" values. Wattenberg's argument is that the modern, industrial, free West (in which he includes Japan) serves Third World peoples as their "most important model" and source of what "most" of them desire – wealth and freedom. Economically, he claims that poor nations' progress depends on access to Western technology and markets, and world security depends on the continuing spread of democratic values. Demographically, he says, "It would not be a bad policy for *all* nations to aim toward a total fertility rate that is stable or slightly positive: in the range of 2.1 or 2.3."

He may have a point.

– Jean van der Tak

SPOTLIGHT

BOTSWANA

Population (mid-1987 est.): 1.2 million
Land area: 231,804 sq. miles
Births per 1,000 pop.: 48
Deaths per 1,000 pop.: 14
Rate of natural increase: 3.4 percent
Total fertility rate: 6.7
Infant mortality rate: 70 (infant deaths per 1,000 live births)
Life expectancy at birth: 58
GNP per capita (1985 est.): US$840
Capital: Gaborone

by Cary Davis

Botswana, formerly Bechuanaland until it gained independence in 1966, is a landlocked, Texas-sized country in southern Africa. It borders Namibia to the west and north, and Zambia and Zimbabwe to the east. Its southern border is shared with South Africa, whose proximity weighs heavily on life in Botswana. Most of the population lives along the more fertile eastern border since the Kalahari desert and near-desert lands are found in the south and west. In the north, the Okavango River flows into a great inland delta providing one of the most diversified wildlife habitats in all of Africa.

The population of Botswana is dominated by eight Bantu tribal groups, each represented in the government's House of Chiefs. The white population, which has remained since the British protectorate era, is an estimated 1 percent of the total. A few Bushman tribes can also be found. English is the official language, but Setswana is predominant in the tribal dialects.

While Botswana's 1.2-million population is small relative to its land area, it is growing rapidly, creating development and environmental problems. Since 1971, the growth rate has been in excess of 3.5 percent per year, one of the highest in the world, and is expected to remain so for some time. Women in Botswana still bear an average of close to 7 children during their lifetimes. It is projected that the population will be over 1.8 million in 2000, having nearly doubled in 20 years.

Only six urban areas had populations over 10,000 in 1986. The largest of these, Gaborone, estimated to be 95,000 (up from 18,000 in 1971), may also rank as the fastest-growing capital in Africa. Providing future housing, water, sanitation, health, and education services will necessarily be costly.

The traditional economy is based on agriculture, which employs about 60 percent of the labor force, and livestock raising. The generally low and unpredictable rainfall favors the latter. Crop production has not met domestic demand, and current drought conditions only aggravate the situation. Mining, led by diamond and copper-nickel operations, provided 32 percent of the Gross Domestic Product in 1984, up from 9 percent in 1975.

Excess labor is exported to South Africa, providing an important source of income, but also making Botswana vulnerable to South African economic and political shifts. Since the mid-1970s, this employment alternative has declined, compounding economic problems by reducing the flow of remittances and increasing the need for domestic employment.

Although Botswana relies heavily on transportation and communication links with its southern neighbor, the government is openly critical of apartheid. Tensions between the two countries have run particularly high following charges by South Africa that Botswana is a base for guerrillas from the African National Congress (ANC).

The national 1984 Family Health Survey showed that 19 percent of women of reproductive age in union were using a modern contraceptive method; compared to other announced Sub-Saharan African contraceptive rates, only Zimbabwe's 27 percent is higher. Nevertheless, Botswana's fertility remains high. The national government appears to be moving toward more concerted action on the population front; in September 1986 a Conference of Parliamentarians and Chiefs met to consider creating a National Population Policy aimed at better coordination of population growth and economic development.

Cary Davis/PRB

The Parliamentarians and Chiefs discussed population policy in Gabarone.